Amendments to the Claims

1. (Currently amended) A method for calibrating a blood property sensor, the method comprising:

(a) connecting an arterial tubing portion of a dialysis system to withdraw blood from a patient and connecting a venous tubing portion of the dialysis system to deliver filtered blood to the patient;

(b) ~~changing~~ providing an ultrafiltration rate [[of]] in the dialysis system ~~to induce a change in a blood property in the filtered blood~~;

(c) determining at least one property of the filtered blood passing a blood property sensor in the venous tubing portion; and

(d) determining a calibration coefficient of the blood property sensor corresponding to the determined blood property of the filtered blood and the ultrafiltration rate.

2. (Original) The method of Claim 1, further comprising determining a blood volume change corresponding the calibration coefficient.

3. (Cancelled)

4. (Original) The method of Claim 1, further comprising employing an ultrasound sensor as the blood property sensor.

5. (Previously presented) The method of Claim 1, wherein determining at least one property of filtered blood includes determining one of protein concentration, saline or electrolyte of the filtered blood.

6. (Previously presented) The method of Claim 1, wherein determining at least one property of the filtered blood includes measuring one of a photometric, optical, electrical or thermal property of the filtered blood.

7. (Currently amended) The method of Claim 1, further comprising providing a different second ultrafiltration rate in the dialysis system and determining the calibration coefficient of the blood property sensor corresponding to a difference between the ultrafiltration rate and the second ultrafiltration rate ~~known change in filtered blood from the change in the ultrafiltration rate~~.

8. (Previously presented) A method for calibrating a sensor in a blood system having a vascular portion and an extracorporeal portion, the method comprising:

(a) introducing an indicator bolus upstream of a blood property sensor in the extracorporeal portion to form diluted blood;

(b) measuring a property of the diluted blood with a blood property sensor in the extracorporeal portion; and

(c) determining a calibration coefficient of the blood property sensor corresponding to the measured property of the diluted blood and an ultrafiltration rate of a dialyzer in the extracorporeal portion.

9. (Previously presented) The method of Claim 8, wherein introducing the indicator bolus is effective to change an ultrasound velocity in the diluted blood.

10. (Previously presented) The method of Claim 8, wherein measuring a property of diluted blood includes measuring one of photometric, optical, electrical or thermal property of the diluted blood.

11. (Previously presented) The method of Claim 8, wherein measuring a property of diluted blood includes measuring one of protein concentration, saline, ultrasound velocity or electrolyte of the diluted blood.

12. (Previously presented) An apparatus for calibrating a blood property sensor in a blood system, comprising:

(a) an extracorporeal portion having a first end adapted to be connected to a vascular portion of the blood system at an upstream end and a second end adapted to be connected to the vascular portion at a downstream end;

(b) a blood property sensor coupled to the extracorporeal portion for detecting a property of diluted blood flowing within the extracorporeal portion; and

(c) means for determining a calibration coefficient of the blood property sensor corresponding to the detected property of the diluted blood and one of an ultrafiltration rate and a change in the ultrafiltration rate of a dialysis system in the extracorporeal portion.

13. (Original) The apparatus of Claim 12, wherein the blood property sensor is one of a photometric, optical, electrical or thermal sensor.

14. (Original) The apparatus of Claim 12, wherein the extracorporeal portion includes an arterial length and the blood property sensor is located along the arterial length.

15. (Previously presented) An apparatus for calibrating a blood property sensor in a blood system having an extracorporeal portion, comprising:

(a) a blood property sensor coupled to the extracorporeal portion for detecting a property of diluted blood flowing within the extracorporeal portion; and

(b) means connected to the blood property sensor for determining a calibration coefficient of the blood property sensor corresponding to the detected property of the diluted blood in the extracorporeal portion and one of an ultrafiltration rate and a change in the ultrafiltration rate of a dialysis system in the extracorporeal portion.

16. (Currently amended) A method of calibrating a blood property sensor in an extracorporeal blood circuit fluidly connected to a vascular blood circuit, the method comprising:

(a) providing one of an ultrafiltration rate and a change in ~~changing~~ an ultrafiltration rate in a dialyzer in the extracorporeal blood circuit ~~to induce a change to a predetermined blood property~~;

(b) measuring a ~~corresponding change in the~~ blood property at a blood property sensor in the extracorporeal blood circuit; and

(c) determining a calibration coefficient of the blood property sensor corresponding to the measured ~~change~~ blood property and the one of the an ultrafiltration rate and a change in an ultrafiltration rate.

17. (Previously presented) A method of calibrating a blood property sensor in an extracorporeal blood circuit, the method comprising:

(a) introducing a known amount of indicator into an extracorporeal blood circuit;

(b) measuring a change in a blood parameter corresponding to passage of the indicator at a blood property sensor coupled to the extracorporeal blood circuit; and

(c) determining a calibration coefficient of the blood property sensor corresponding to the measured change and an ultrafiltration rate of a dialyzer in the extracorporeal blood circuit.

18. (Previously presented) A method of calibrating a blood property sensor in an extracorporeal blood circuit fluidly connected to a vascular blood circuit, the method comprising:

(a) measuring a blood property of a dilution indicator bolus passing a blood property sensor in the extracorporeal blood circuit; and

(b) determining the calibration coefficient of the blood property sensor corresponding to the measured blood property and one of an ultrafiltration rate and a change in the ultrafiltration rate of a dialysis system in the extracorporeal blood circuit.